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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/586,072	06/02/2000	Bernd Andreas Edler	Edler 1-4	5463

7590 03/28/2005

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EXAMINER
HAN, QI

ART UNIT	PAPER NUMBER
2654	

DATE MAILED: 03/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/586,072	EDLER ET AL.	
	Examiner	Art Unit	
	Qi Han	2654	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 October 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-33* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-33* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Response to Amendments

2. This communication is responsive to the applicant's amendment dated 10/29/2004. Applicant amended claims 1, 13, 20, 25 and 30-33.

The examiner withdraws the claim objection, because the applicant amended the claims.

Response to Arguments

3. Applicant's arguments regarding disclosure objection (see the amendment: page 8, paragraph 3) have been fully considered but they are not persuasive, simply because the original did not disclose the new added content. The objection will be sustained.

Applicant's arguments regarding claim rejection under 35 USC 112 1st (amendment: page 9, paragraph 4), have been fully considered but they are not persuasive, because the description of the claimed subject matter in the original specification cannot enable a person skilled in the art to make or used the claimed invention, without undue effort. The rejection will be sustained.

Applicant's arguments regarding claim rejection under 35 USC 112 2nd (amendment: page 9, paragraph 4), have been fully considered but they are not persuasive, because processing for one dimension signal like audio has very different characteristics and complexity from processing for two dimension signal like image. The original specification did not provide the

scope and disclosure for processing any two-dimension signal. Further, it is noted that even though the prior art (Srinivasan) mentions MPEG, his disclosure only relates to **audio part** of MPEG (see Srinivasan: abstract), which does not provide any evidence of replacing one-dimension processing with two-dimension processing as argued. The rejection will be sustained.

Applicant's arguments with respect to claim rejection under 35 USC 103 (amendment: page 10-12) have been considered but are moot in view of the new ground(s) of rejection, since the amended independent claims 1, 13, 20, 25 and 30-33 introduce new issue and/or new subjection matter.

Specification

4. The amendment filed on 07/07/2003 is objected to under 35 U.S.C. 132 because it introduces new matter into the disclosure. 35 U.S.C. 132 states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows:

On page 7, lines 23-25, the new added content "In the case ..., **as would be apparent to a person of ordinary skill in the art**" is not disclosed and supported by the original disclosure. Applicant is required to cancel the new matter in the reply to this Office Action.

Claim Rejections - 35 USC § 112

5. Claim 7 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the

specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Regarding claim 7, claim recites that "said signal is an image signal and said adaptive filter is controlled a way that said magnitude response approximates an inverse of visibility threshold", which is disclosed nowhere in the original specification. Even though the claimed subject matter is added in the substitute specification (paper 12, page 7, lines 23-25) under disclosure objection (see above), nowhere else in the specification supports the claim. It is pointed out that the audio signal processed in one-dimension is very different from image signal processed in two-dimension, including filters, transforms, algorithms and the related hardware and software, which is not disclosed in the specification, thus the applicant's specification does not disclose the claimed subject matter in such full, clear, concise, and exact terms as to enable any person skilled in the art to make and/or use the claimed inventor, without undue effort.

6. Claims 1, 13, 20, 25 and 30-33 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Regarding claim 1, the new amended limitation "wherein the spectral and temporal resolutions of one or more subband utilized in said encoding are independent of said adaptive filter" introduces new subject matter, because it is not specifically disclosed in the original specification (see the closest disclosure on page 4, lines 16-19 and page 8, lines 13-27 of the

specification). As best understand, in light of specification (page 8, lines 17-23), the limitation will be interpreted as "wherein the shapes of the masking thresholds are almost frequency independent" hereinafter.

Regarding claims 13, 20, 25 and 30-33, the rejection is based on the same reason described for claim 1, because the claims recite same or similar limitations as claim 1.

Regarding all dependent claims, the rejection is based on the same reason described for claim 1, because the dependent claims inherit all limitations of their parent claim(s).

The following is a quotation of the second paragraph of 35 U.S.C. 112:

7. Claims 1, 13, 20, 25 and 30-33 rejected under 35 U.S.C. 112, second paragraph, as failing to set forth the subject matter which applicant(s) regard as their invention.

Evidence that independent claims 1, 13, 20, 25 and 30-33 fail(s) to correspond in scope with that which applicant(s) regard as the invention can be found in the Specification. Under "Field of the Invention" section and "Summary of Invention" section, applicant has stated that "the present invention relates generally to audio coding techniques, and more particularly to perceptually-based coding of audio signal" (page 1, line 19-20) and "a perceptual audio coder is disclosed for encoding audio signals" (page 4, line 7), and these indicate that the invention is different from what is defined in the claim(s) because no **audio coding (encoding decoding)** or **audio signal** is recited in said independent claims.

Further, the limitation "**the** spectral and temporal resolutions..." in the claims lack sufficient antecedent basis for the claims.

Claim Rejections - 35 USC § 103

8. Claims 1-2, 6-10, 13-14 and 30-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Srinivasan et al. (IEEE Transaction on signal processing, vol. 46, April 1998) hereinafter referenced as Srinivasan, in view of Smith (ISBN 0-9660176-33, 1997) in view of Tsurushima et al. (US 2001/0047256 A1) hereinafter referenced as Tsurushima, in view of Johnston (US 5,481,614).

Regarding **claim 1**, as best understood in view of the claim rejection under USC 112 1st and 2nd (see above), Srinivasan discloses high-quality audio compression using an adaptive wavelet packet decomposition and psychoacoustic modeling (title), comprising that an encoder/decoder (Fig. 1) comprises an encoder filter bank structure that has an input, an output, and is controlled by a psychoacoustic model, which has the same input data and has a special output for controlling the filter bank structure (page 1086, right column, paragraph 2-4); the psychoacoustic model (Fig. 1) starts with the frequency domain representation, from which the noise-masking threshold for the critical bands are calculated (page 1087, left column, paragraph 3), and the magnitude values of the frequency domain representation are converted to a critical band representation and convolved with the spreading function (page 1087, left column, paragraph 4); introduces the concept of subband perceptual rate, which is a measure that tries to adapt the subband structure to approach the psychoacoustic model as closely as possible (page 1086, right column, paragraph 4); the some examples shows a higher threshold in the lower frequency region due to the high-energy (equivalent to a measure using magnitude) peak in the same region and the resulting adaptation (page 1089, right column, paragraph 3);

which corresponds to the claimed "filtering said signal using an adaptive filter controlled by a psychoacoustic model, said adaptive filter producing a filter output signal and having a magnitude response".

Even though Srinivasan discloses an adaptive filter, Srinivasan does not specifically disclose the filter "having a magnitude response that approximates an inverse" of certain form of a signal. However, this feature is well known in the art as evidenced by Smith who discloses custom filters (page 297) for "the scientist and engineer's guide to digital signal processing"(book title), comprising deconvolution filter (page 300, paragraph 5), and shows the frequency response of the deconvolution filter, which has an inverse response part (amplitude or magnitude) of another signal (page 306, paragraph 1 and Figure 17-6-d). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Srinivasan by specifically providing a deconvolution filter having an inverse response part (amplitude or magnitude) of another signal, as taught by Smith, for the purpose of canceling undesired part of spectrum (Smith: page 306, paragraph 1)

Further, Srinivasan in view of Smith does not expressly disclose said inverse of said certain form of a signal being or relating an inverse of "the masking threshold" and "the shapes of the masking thresholds are almost frequency independent". However, this feature is well known in the art as evidenced by Tsurushima who discloses deconvolution relating the masking threshold found from the allowable noise level and using Bark spectrum SB for masking the portions of the spectral components SB (which suggests that the shapes of the masking thresholds are almost frequency independent) (paragraphs

134-145). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Srinivasan in view of Smith by specifically providing deconvolution (inverse convolution) relating the masking threshold and using Bark spectrum for masking, as taught by Tsurushima, for the purpose of taking into account the effects of masking (Tsurushima: paragraph 139). In addition, Tsurushima discloses a combination of a convolution filter circuit 523, divider 526 for deconvolving the allowable noise level, and substractor 528 subtracts the masking threshold from the Bark spectrum SB for masking the portions of the spectral components SB lower than the level of the masking spectrum MS (paragraphs 139-146), which can also be broadly interpreted as the claimed "a magnitude response that approximates an inverse of masking threshold", because based on Tsurushima's teaching, the higher masking threshold the lower the output of the substractor, and vice versa.

Furthermore, Srinivasan in view of Smith and Tsurushima does not expressly disclose "quantizing and encoding the filter output signal together with side information for filter adaptation control." However, this feature is well known in the art as evidenced by Johnston who discloses a method and apparatus for coding audio signals based on perceptual model (title), comprising a quantizer and rate control processor 206 in coder (Fig. 2) that takes the outputs from the analysis bank and the perceptual model, and allocates bits, noise, and controls other system parameters so as to meet the required bit rate for the given application (column 7, lines 19-31), a perceptual model (not share input with the filter) processor 204 calculating an estimate of the perceptual importance and noise masking properties for providing improved control of the filtering operations

(column 6, lines 16-34). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Srinivasan in view of Smith and Tsurushima by specifically providing a quantizer and encoder for the adaptive filter output signal with side information controlled by psychoacoustic model, as taught by Johnston, for the purpose of increase quality for the coding system.

Regarding **claim 2** (depending on claim 1), Srinivasan in view of Smith, Tsurushima and Johnston further discloses quantizing and encoding step uses a transform or analysis filter bank suitable for redundancy reduction, (Srinivasan: page 1087, left column, paragraph 3, 'FFT'; page 1088, left column, paragraph 3, 'adaptive filter bank'; Johnston: column 8, lines 'analysis filter bank 202', 'MDCT').

Regarding **claim 6** (depending on claim 1), Srinivasan in view of Smith, Tsurushima and Johnston discloses audio compression (Srinivasan: page 1085, right column, paragraph 1), which satisfies the limitation of the claimed "said signal is an audio signal."

Regarding **claim 7** (depending on claim 1), as best understood in view of the claim rejection under USC 112 1st (see above), Srinivasan in view of Smith, Tsurushima and Johnston further suggests that the audio compression technique is adapted from image compression area, along with modifications to use the psychoacoustic model (Srinivasan: page 1085, right column, paragraph 4 to (page 1086, left column, paragraph 1), so that the technique is capable of applying image, which corresponds to the claimed "said signal is an image signal and said adaptive filter is controlled in a way that said magnitude response approximates an inverse of a visibility threshold."

Regarding **claim 8** (depending on claim 1), Srinivasan in view of Smith, Tsurushima and Johnston further shows that the bit stream output from decoder is transmitted to the input of decoder (Srinivasan: Fig. 1 and page 1091, left column, paragraph 1), which corresponds to the claimed "the step of transmitting said encoded signal to a decoder."

Regarding **claim 9** (depending on claim 1), Srinivasan in view of Smith, Tsurushima and Johnston further discloses that the compressed PAC signal is output to a communications channel/storage medium 106 (Johnston: Fig. 1 and column 5, lines 26-27), which corresponds to the claimed "the step of recording said encoded signal on a storage medium."

Regarding **claim 10** (depending on claim 1), Srinivasan in view of Smith, Tsurushima and Johnston further discloses "said encoding further comprises the step of employing an adaptive Huffman coding technique", (Johnston: column 7, lines 52-60, 'mini-redundancy Huffman coding technique', 'the useful adaptations of the Huffman').

Regarding **claim 13**, as best understood in view of the claim rejection under USC 112 1st and 2nd (see above), Srinivasan discloses high-quality audio compression using an adaptive wavelet packet decomposition and psychoacoustic modeling (title), comprising that an encoder/decoder (Fig. 1) comprises an encoder filter bank structure that has an input, an output, and is controlled by a psychoacoustic model, which has the same input data and has a special output for controlling the filter bank structure (page 1086, right column, paragraph 2-4); the psychoacoustic model (Fig. 1) starts with the frequency domain representation, from which the noise-masking threshold for the critical bands are

calculated (page 1087, left column, paragraph 3), and the magnitude values of the frequency domain representation are converted to a critical band representation and convolved with the spreading function (page 1087, left column, paragraph 4); introduces the concept of subband perceptual rate, which is a measure that tries to adapt the subband structure to approach the psychoacoustic model as closely as possible (page 1086, right column, paragraph 4); the some examples shows a higher threshold in the lower frequency region due to the high-energy (equivalent to a measure using magnitude) peak in the same region and the resulting adaptation (page 1089, right column, paragraph 3), which corresponds to the claimed "This corresponds to the claimed "filtering said signal using an adaptive filter controlled by a psychoacoustic model, said adaptive filter producing a filter output signal and having a magnitude response; and transforming the filter output signal using a plurality of subbands suitable for redundancy reduction."

Even though Srinivasan discloses an adaptive filter, Srinivasan does not specifically disclose the filter "having a magnitude response that approximates an inverse" of certain form of a signal. However, this feature is well known in the art as evidenced by Smith who discloses custom filters (page 297) for "the scientist and engineer's guide to digital signal processing"(book title), comprising deconvolution filter (page 300, paragraph 5), and shows the frequency response of the deconvolution filter, which has an inverse response part (amplitude or magnitude) of another signal (page 306, paragraph 1 and Figure 17-6-d). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Srinivasan by specifically providing a deconvolution filter having an inverse response part (amplitude

or magnitude) of another signal, as taught by Smith, for the purpose of canceling undesired part of spectrum (Smith: page 306, paragraph 1)

Further, Srinivasan in view of Smith does not expressly disclose said inverse of said certain form of a signal being or relating an inverse of "the masking threshold" and "the shapes of the masking thresholds are almost frequency independent". However, this feature is well known in the art as evidenced by Tsurushima who discloses deconvolution relating the masking threshold found from the allowable noise level and using Bark spectrum SB for masking the portions of the spectral components SB (which suggests that the shapes of the masking thresholds are almost frequency independent) (paragraphs 134-145). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Srinivasan in view of Smith by specifically providing deconvolution (inverse convolution) relating the masking threshold and using Bark spectrum for masking, as taught by Tsurushima, for the purpose of taking into account the effects of masking (Tsurushima: paragraph 139). In addition, Tsurushima discloses a combination of a convolution filter circuit 523, divider 526 for deconvolving the allowable noise level, and substractor 528 subtracts the masking threshold from the Bark spectrum SB for masking the portions of the spectral components SB lower than the level of the masking spectrum MS (paragraphs 139-146), which can also be broadly interpreted as the claimed "a magnitude response that approximates an inverse of masking threshold", because based on Tsurushima's teaching, the higher masking threshold the lower the output of the substractor, and vice versa.

Furthermore, Srinivasan in view of Smith in view of Tsurushima does not expressly disclose "quantizing and encoding the filter output signal together with side information for filter adaptation control." However, this feature is well known in the art as evidenced by Johnston who discloses a method and apparatus for coding audio signals based on perceptual model (title), comprising a quantizer and rate control processor 206 in coder (Fig. 2) that takes the outputs from the analysis bank and the perceptual model, and allocates bits, noise, and controls other system parameters so as to meet the required bit rate for the given application (column 7, lines 19-31), a perceptual model (not share input with the filter) processor 204 calculating an estimate of the perceptual importance and noise masking properties for providing improved control of the filtering operations (column 6, lines 16-34). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Srinivasan in view of Smith in view of Tsurushima by specifically providing a quantizer and encoder for the adaptive filter output signal with side information controlled by psychoacoustic model, as taught by Johnston, for the purpose of increase quality for the coding system.

Regarding **claim 14** (depending on claim 13), the rejection is based on the same reason described for claim 2 because the claim recites same or similar limitation(s) as claim 2.

Regarding **claim 30**, it discloses an apparatus. The rejection is based on the same reason described for claim 1 because the claim recites same or similar limitation(s) as claim 1.

Regarding **claim 31**, it discloses an apparatus. The rejection is based on the same reason described for claim 13 because the claim recites same or similar limitation(s) as claim 13.

9. Claims 5,11-12 and 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Srinivasan in view of Smith, Tsurushima and Johnston further in view admitted prior art hereinafter referenced as admission.

Regarding **claim 5** (depending on claim 1), Srinivasan in view of Smith, Tsurushima and Johnston does not expressly disclose that "a filter order and the intervals of filter adaptation of said adaptive filter are selected suitable for irrelevancy reduction." However, the examiner contends that the concept of using a filter bank quantizing and encoding was well known, as taught by admission.

Admission further suggests that a well-know technique (frequency-warping) very efficient in approximation accuracy for a given filter order (page 9, lines 6-23).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Srinivasan in view of Smith, Tsurushima and Johnston by specifically providing the well-know technique (frequency-warping) with a given filter order for achieving sufficient approximation accuracy, as taught by admission, for the purpose of increasing the quality for coding system.

Regarding **claim 11** (depending on claim 1), Srinivasan in view of Smith, Tsurushima and Johnston does not expressly disclose "said filtering step is based on a frequency warping technique using a non-linear frequency scale." However, the

examiner contends that the concept of providing a frequency warping technique using a non-linear frequency scale was well known, as taught by admission.

Admission further discloses that the frequency warping technique has described by Strube (page 9, line 8), and also suggests that the frequency scale reflecting the non-linearity of the critical band scale is well known (page 9, lines 16-21).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Srinivasan in view of Smith, Tsurushima and Johnston by specifically providing the frequency warping technique using a non-linear frequency scale, as taught by admission, for the purpose of increasing coding efficiency.

Regarding **claim 12** (depending on claim 1), Srinivasan in view of Smith, Tsurushima and Johnston does not expressly disclose that "coding stage for filter coefficients comprises a conversion from linear-predictive coefficient filter coefficients to lattice coefficients or to Line Spectrum Pairs." However, the examiner contends that the concept of providing LPC filter coefficients to lattice or to Line Spectrum Pairs for encoding process was well known, as taught by admission.

Admission further discloses that the techniques for speech coding, such as linear-predictive coefficient (LPC) and line spectral pairs (LSP) are well known (page 4, lines 20-25, and page 7, lines 16-30).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Srinivasan in view of Smith, Tsurushima and Johnston by specifically applying the well known techniques of LPC filter coefficients

and line spectrum pairs for converting, as taught by admission, for the purpose of increasing compatibility for the coding system.

Regarding **claim 17** (depending on claim 13), the rejection is, in addition, based on the same reason described for claim 5 because the claim recites same or similar limitation(s) as claim 5.

Regarding **claim 18** (depending on claim 13), the rejection is, in addition, based on the same reason described for claim 11 because the claim recites same or similar limitation(s) as claim 11.

Regarding **claim 19** (depending on claim 13), the rejection is, in addition, based on the same reason described for claim 12 because the claim recites same or similar limitation(s) as claim 12.

10. Claims 3-4, 15-16, 20-29 and 32-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Srinivasan in view of Smith, Tsurushima and Johnston, and further in view of well known prior art (MPEP 2144.03).

Regarding **claim 3** (depending on claim 1), Srinivasan in view of Smith, Tsurushima and Johnston does not expressly disclose that the "quantizing and encoding steps employ fixed quantizer step sizes." However, the examiner takes official notice of the fact that it was well known in the art to provide quantizing and encoding steps with fixed quantizer step sizes.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Srinivasan and Johnston by specifically providing

quantizing and encoding steps with fixed quantizer step sizes, for the purpose of further reducing transition rate for a coding system.

Regarding **claim 4** (depending on claim 1), Srinivasan in view of Smith, Tsurushima and Johnston does not expressly disclose that the "quantizing and encoding step reduces the mean square error in said signal." However, the examiner takes official notice of the fact that it was well known in the art to reduce the mean square error (MSE) in said signal in quantizing and encoding step.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Srinivasan and Johnston by specifically providing quantizing and encoding steps for reducing the mean square error (MSE) in said signal, for the purpose of further increasing quality for a coding system.

Regarding **claim 15** (depending on claim 13), the rejection is, in addition, based on the same reason described for claim 3 because the claim recites same or similar limitation(s) as claim 3.

Regarding **claim 16** (depending on claim 13), the rejection is, in addition, based on the same reason described for claim 4 because the claim recites same or similar limitation(s) as claim 4.

Regarding **claims 20-24**, they disclose a method for decoding, which corresponds to an inverse method of claims 1, 2, 3, 5 and 12, respectively. The inverse method is obvious in that it simply provides functionally reversed process for the method found in claims 1, 2, 3, 5 and 12, respectively.

Regarding **claims 25-29**, they disclose a method for decoding, which corresponds to an inverse method of claims 13,14, 15, 17 and 19, respectively. The inversed method is obvious in that it simply provides functionally reversed process for the method found in claims 13,14, 15, 17 and 19, respectively.

Regarding **claim 32**, it discloses an apparatus. The rejection is based on the same reason described for claim 20 because the claim recites same or similar limitation(s) as claim 20.

Regarding **claim 33**, it discloses an apparatus. The rejection is based on the same reason described for claim 25 because the claim recites same or similar limitation(s) as claim 25.

Conclusion

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

12. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

13. Please address mail to be delivered by the United States Postal Service (USPS) as follows:

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Alexandria, VA 22313-1450

or faxed to:

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Or:

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If no Mail Stop is indicated below, the line beginning Mail Stop should be omitted from the address.

Effective January 14, 2005, except correspondence for Maintenance Fee payments, Deposit Account Replenishments (see 1.25(c)(4)), and Licensing and Review (see 37 CFR 5.1(c) and 5.2(c)), please address correspondence to be delivered by other delivery services (Federal Express (Fed Ex), UPS, DHL, Laser, Action, Purolater, etc.) as follows:

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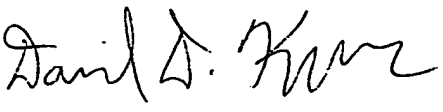
Alexandria , VA 22314

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Qi Han whose telephone numbers is (703) 305-5631. The examiner can normally be reached on Monday through Thursday from 9:00 a.m. to 7:00 p.m. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil, can be reached on (703) 305-9645.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Inquiries regarding the status of submissions relating to an application or questions on the Private PAIR system should be directed to the Electronic Business Center (EBC) at 866-217-9197 (toll-free) or 703-305-3028 between the hours of 6 a.m. and midnight Monday through Friday EST, or by e-mail at: ebc@uspto.gov. For general information about the PAIR system, see http://pair-direct.uspto.gov.

QH/qh
March 22, 2005



DAVID D. KNEPPER
PRIMARY EXAMINER